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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

FINEMAN, LEE A

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,176

Applicant(s)

DUNN ET AL.

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 128 and 129. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On page 11, line 12 and page 15, line 18 the word “taught” should be --taut--.

On page 17, lines 17 and 18, “reflected wave 125” and “dashed line 127” should be --reflected wave 127-- and --dashed line 125--.

Appropriate correction is required.

Claim Objections

3. Claims 1-21 are objected to because of the following informalities:

In claims 1, 2 and 14, the word “taught” should be --taut--. The dependent claims inherit the deficiencies of the claims from which they depend.

In claim 8, line 2, “be” should be --by--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The statement “a process step to reduce provide a condensation reduction means” is unclear.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5, 7-10, 14, 16-18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Braig et al., U.S. Patent No. 6,095,986.

Regarding claim 1, Braig et al. discloses a barrier and Mid-IR optical window (fig. 3A) for a free space optical system comprising at least one frame member (50) and at least one thin film (100), a first frame member forming a closed loop structure (waist section of 50) about a substantially open aperture (90) further having a receiving bonding surface (flat portion of waist section 50) upon which a first thin film (100) may be received and bonded whereby said first thin film is affixed to said first frame and extends over the open aperture to form a taut, substantially flat surface (fig 3B, column 10, lines 62-64).

Regarding claims 2, 3, 5, and 7, Braig et al. further discloses said first frame (fig. 5) further comprises a mechanical coupling means (170) whereby said frame may be coupled to an

Art Unit: 2872

optics head enclosure housing (160) and said mechanical coupling means is a frame shape and size which cooperates with a receiving cavity of an enclosure housing whereby changing a window is a matter of simple manipulation of parts (fig. 5), and said thin film is a polymer type material (column 8, lines 53-59) comprising molecules in a stressed state whereby polymer molecules are subject to a relaxing force which tends to pull the film taut in a shrinking action and are stretched from their relaxed state and exert a force on the thin film whereby the thin film tends to be pulled into a plane (column 12, lines 38-47) and said thin film is bonded to said frame by an adhesive compatible with frame material and polymer material (column 10, line 37).

Regarding claim 8, Braig et al. further discloses said window is comprised of two frames (fig. 5, 170) and two thin film members (180) separated spatially by a body member (150).

Regarding claims 9 and 10, Braig et al. further discloses a condensation control means (surfactant) in spatial proximity to said thin film whereby condensation on the thin film is reduced (column 9, lines 1-38) and where the condensation control means is a heating element (column 11, lines 27-31).

Regarding claims 14, and 16-18, the method of utilizing the structure of claims 1-3, 5, and 7-10 is inherent therein. Further, in as much as the claim 21 is able to be understood in light 35 U.S.C 112 rejection made above, the rejection also applies to claim 21.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braig et al.

Regarding claims 4 and 19, Braig et al. discloses the claimed invention, as set forth above, except for the bond between the thin film and the frame member being a plastic weld heat bond. Braig teaches using plastic weld heat bond between the frame member and the body (column 12, lines 47-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the thin film to the frame member using a plastic weld head bond to provide an airtight seal. The method of utilizing the structure of claim 4 is inherent therein.

Regarding claim 6, Braig et al. further discloses that the optical window may be circular (fig. 6, 200). Braig et al. discloses the claimed invention, as set forth above, except for the mechanical coupling means being a thread set complementary with an enclosure head. Official Notice is taken that a thread set complementary with an enclosure head is well known in the art as a fastening means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to fasten the window to the enclosure head in the system of Braig et al. by a thread set to provide a quick and easy way to remove the window.

9. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braig et al. in view of Fujisawa et al., U.S. Patent No. 6,444,898 B1.

Braig et al. discloses the claimed invention, as set forth above, except for the condensation means being a desiccant reservoir or a dehumidifier. Fujisawa et al. teaches two

Art Unit: 2872

windows with a space between them (fig. 5) with a desiccant reservoir (67) in it. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a desiccant reservoir, which is a dehumidifier, of Fujisawa et al. in the system of Braig et al. to reduce the moisture in the housing.

10. Claims 13, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braig et al. in view of Rogers, U.S. Patent No. 6,118,583 and Pedrotti, et al., Introduction to Optics, 1993, Prentice Hall, Inc., Second Ed., pp. 396-398.

Braig et al. discloses the claimed invention, as set forth above, except for the finished thin film thickness being a thickness about an odd integer number of quarter wavelengths of a design pass wavelength. Rogers teaches an optical system in the mid-IR range with a window barrier (column 3, line 47-column 4, line 5), where the thickness of the window is an odd integer of the design pass wavelength (column 4, lines 11-19) to reduce reflection in the system. Pedrotti, et al. teaches that a film of an odd integer number of quarter wavelengths provides maximum reduction of reflectance (pg. 397). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the final thickness of the film of Braig et al. to be that of an odd integer number of quarter wavelengths to provide maximum reduction of reflectance as suggested by Rogers and Pedrotti, et al.

Conclusion

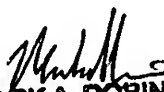
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



LAF
March 7, 2003


MARK A. ROBINSON
PRIMARY EXAMINER